MICROBIOLOGY
CLIENT SERVICES MANUAL

Utah Public Health Laboratory
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Utah Department of Health

GENERAL INSTRUCTIONS

CONTACT US:

ADDRESS, PHONE, FAX, and WEBSITE

Utah Public Health Laboratory
46 North Medical Drive
Salt Lake City, UT 84113-1105
Phone: 801-584-8400
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Webpage: HTTP://health.utah.gov/els/microbiology

KEY PERSONNEL

Billing
- Bob Anderson

Environmental (Water) Microbiology
- Sanwat Chaudhuri, Ph.D. -- Section Chief

Microbiology Bureau
- Barbara Jepson, MPA, MT(ASCP) -- Bureau Director
- Dan Andrews, MS, MT(ASCP) -- Section Chief of Bacteriology, Food Bacteriology, Mycobacteriology, Parasitology
- Norm Brown, BS, MT(ASCP) -- Section Chief of Newborn Screening
- Jana Coombs, BS, M/SV (ASCP) – Section Chief of Molecular Biology, and Bioterrorism Coordinator
- Tom Sharpton, MS, SM(ASCP) -- Section Chief of Immunology,Virology

Technical Services
- Chris Peper, MT(ASCP) -- Section Chief

REPORTING:

You must supply your correct Customer ID Code to receive test results.
Some mail services and couriers are taking a week or more to get your samples to us.
If you are having problems with turn around time for results, check your delivery method.
See individual test for specific reporting criteria and methods.

REQUISITIONS:

Blank request forms with your customer ID code are available from Technical Services (also see Appendix B for blank forms WITHOUT the customer ID).
All information must be provided. Incomplete requisitions cannot be processed.

SPECIMEN LABELING: See individual requirements under specific test.
*****NOTE: Specimen containers from the State of Utah Public Health Lab have an *outdate* printed on the label. Do not collect any sample in an outdated container. Call Technical Services at 801-584-8204 for a new container.**
We do not supply blood collection tubes.

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BACTERIOLOGY & FOOD BACTERIOLOGY Section Chief: Dan Andrews

BIOTERRORISM Coordinator: Jana Coombs

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[See Appendix A for alphabetical list of all tests]

TABLE OF CONTENTS (continued)

[See Appendix A for alphabetical list of all tests]

LAB TEST – Bacteriology (Food Bacteriology) Section

TEST	Bacteria in foods that may be pathogenic for humans (outbreaks only)
METHOD	Culture
AVAILABLE	Scheduled through UDOH Epidemiology: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Sample of suspect food (call Bacteriology section for details)
COLLECT IN	Clean, dry container
PROCESSING	Keep food at 2 to 8 degrees C, unless frozen (if frozen then keep it frozen)
TRANSPORT	Transport at refrigerator or freezer temperature as appropriate
TIME CRITICAL	Transport immediately
LABEL	Client name, type of food, date collected, and bacteria suspected
REQUISITION	Microbiology Foodborne Investigation Test Request Form (may also require submission of CDC form for outbreaks of suspected viral gastroenteritis). See forms in Appendix B.
TEST COMPLETE	Variable, depends on organism
RESULTS	Presence or absence
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Food of the same batch or lot number as the suspect item must be submitted
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	Botulism detection (*Clostridium botulinum*) See also Bioterrorism section (*Clostridium botulinum).*
METHOD	Culture
AVAILABLE	Infant: all clients Child/Adult: must be ordered by UDOH Epidemiology: (801)538-6191.
PATIENT PREP	For stool culture: if a patient has had a barium gastro/enteric procedure, wait at least 72 hrs before collecting a specimen.
SPECIMEN	Feces = at least 10 grams Tissue = entire specimen Wound = swab
COLLECT IN	Sterile container
PROCESSING	No preservatives
TRANSPORT	Room temperature (best at 2 to 8 degrees C)
TIME CRITICAL	Must be received in our lab as soon as possible
LABEL	Patient's full name or unique ID number, patient's age, and collection date
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	> one week after receipt in our lab
RESULTS	Organism present or absent
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	A toxin assay will be performed on all adult isolates
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	Botulism toxin See also Bioterrorism section (*Clostridium botulinum).*
METHOD	Mouse inoculation
AVAILABLE	Infant: all clients Child/Adult: must be ordered by UDOH Epidemiology: (801)538-6191.
PATIENT PREP	For stool toxin: if a patient has had a barium gastro/enteric procedure, wait at least 72 hrs before collecting a specimen.
SPECIMEN	Feces =10 gm Gastric secretions = 20 mL Serum = 10 mL Pure culture = fresh isolate subculture
COLLECT IN	Feces = sterile container **G**astric = Port-A-Cult tube Serum = transport tube Culture = fresh anaerobic subculture
PROCESSING	Serum must be separated from whole blood before shipment
TRANSPORT	Feces, gastric, and serum at 2 to 8 degrees C (**do not freeze**); isolates must be transported in anaerobic transporter.
TIME CRITICAL	Must be received in our lab as soon as possible
LABEL	Patient's full name or unique ID number, patient's age, and collection date
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	> five days from receipt in our lab
RESULTS	Toxin present or absent
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	When toxin is present, it will be typed.
CONTACT	Bacteriology section

LAB TEST -- Bacteriology Section

TEST	*Bordetella pertussis* (pertussis) - see also Molecular Biology section; *Neisseria gonorrhoeae* (GC); *Neisseria meningitidis* (meningitis)
METHOD	Culture confirmation
AVAILABLE	All clients
PATIENT PREP	N/A
SPECIMEN	Pure culture of the organism
COLLECT IN	Appropriate media slant or plate (Regan Lowe, MTM, chocolate agar)
PROCESSING	Fresh subculture
TRANSPORT	Best in a CO_2 pack at 32-35 degrees C
TIME CRITICAL	To be viable outside of a 35 degree CO_2 pack, must be received in the lab within four hours of being removed from the incubator.
LABEL	Patient's full name or unique ID number, and date of subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Three days from receipt in our lab
RESULTS	Presence or absence
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Susceptibility automatically performed on confirmed *Neisseria gonorrhea* isolates
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	*E. coli* (shiga-toxin producing strains only); *Haemophilus influenza* (H. flu); *Legionella pneumophila* (Legionella); *Neisseria meningitidis* (meningitis); *Salmonella,* *Shigella*
METHOD	Serotyping (all organisms are confirmed before being typed)
AVAILABLE	All clients
PATIENT PREP	N/A
SPECIMEN	Pure culture of the organism
COLLECT IN	Nutrient media slant or plate that supports organism growth
PROCESSING	Fresh subculture
TRANSPORT	Room temperature
TIME CRITICAL	Organism must be received in our lab within 24 hours of subculture
LABEL	Patient's full name or unique ID number, and date of subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Variable (depends on organism)
RESULTS	Organism and serotype
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Requisition must include submitting laboratory's presumptive identification of the organism to be typed.
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	Stool for bacterial pathogens (*Salmonella, Shigella*, entero-hemorrhagic *E. coli, Campylobacter*)
METHOD	Culture
AVAILABLE	All clients
PATIENT PREP	If a patient has had a barium gastro/enteric procedure, wait at least 72 hrs before collecting a specimen
SPECIMEN	Feces (stool), rectal swab
COLLECT IN	Cary Blair Medium containers available from Technical Services
PROCESSING	Do not fill beyond red line ("Add specimen to this line"). Mix well with pink medium (instruction sheet enclosed with collection kit). **Do not use the collection device past the expiration date printed on the label (i.e., EXP: 11/01).**
TRANSPORT	Best at 2 to 8 degrees C
TIME CRITICAL	Should be received in our lab within 24 hours of collection
LABEL	Patient's full name or unique ID number, and collection date (space provided on the container label).
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Usually within 4 days of receipt
RESULTS	Pathogen isolated (positive) or "No Pathogens [detailed] recovered" (negative)
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Isolated pathogens will be serotyped (except *Campylobacter*)
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	Susceptibilities (sensitivities): *Bordetella pertussis* (pertussis); *Neisseria gonorrhoeae* (GC); *Neisseria meningitidis* (meningitis)
METHOD	Disc diffusion (Kirby Bauer), E-test for *Neisseria meningitidis*
AVAILABLE	All clients
PATIENT PREP	N/A
SPECIMEN	Pure culture of the organism
COLLECT IN	Nutrient media slant or plate to support organism growth
PROCESSING	Fresh subculture
TRANSPORT	Room temperature
TIME CRITICAL	Organism must be received in our lab within 24 hours
LABEL	Patient's full name or unique ID number, and date of subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Three days from receipt in our lab
RESULTS	Each applicable antibiotic reported as susceptible, intermediate or resistant
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Susceptibility testing done automatically on all *Neisseria gonorrhoeae* isolates
CONTACT	Bacteriology section

LAB TEST – Bacteriology Section

TEST	*E. coli* verotoxin producing strain (enterohemorrhagic *E. coli*)
METHOD	Culture isolation, EIA, verotoxin assay
AVAILABLE	Stool culture = local health departments only, referred isolate = all clients
PATIENT PREP	If a patient has had a barium gastro/enteric procedure, wait at least 72 hrs before collecting a specimen
SPECIMEN	Culture = feces; referred isolate = fresh subculture on nutrient agar plate or slant; sorbitol negative isolate; positive MAC enrichment broth from EHEC test
COLLECT IN	Feces = Cary Blair collection vial (FB) available from Technical Services EHEC broth = send tube Referred culture = nutrient agar plate or slant to support organism growth
PROCESSING	Feces = do not fill beyond red line ("Add specimen to this line"). Mix well with pink medium (instruction sheet enclosed with collection kit). **Do not use the collection device past the expiration date printed on the label (i.e., EXP: 11/01).** EHEC broth should be refrigerated until sent. Referred culture = fresh isolate
TRANSPORT	Feces, EHEC broth = room temperature, may be on wet ice. Referred culture = wet ice.
TIME CRITICAL	Should be received in our lab within 24 hours of collection or subculture
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Negatives = 72 hrs; positives = variable depending on confirmation testing
RESULTS	Normal = *E. coli*, verotoxin positive strains will have the numbers and letters associated with their type (i.e. *E. coli* 0157-H7).
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Toxin positive isolates, not 0157-H7, are referred to CDC for typing. PFGE may be performed on isolates related to an outbreak investigation as determined by UDOH Epidemiology.
CONTACT	Bacteriology section

LAB TEST – Bioterrorism

TEST	*Bacillus anthracis* (Anthrax)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens.
PATIENT PREP	N/A
SPECIMEN	Environmental samples, organism isolate, cutaneous lesions, stool, rectal swab, blood cultures, whole blood, sputum, CSF, tissue, or nasal swab
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	48 hours
RESULTS	Recovered or not recovered; Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Brucella* species (Brucellosis)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens.
PATIENT PREP	N/A
SPECIMEN	Organism isolate, environmental samples, blood, serum, spleen, liver or abscess
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	6 days
RESULTS	Recovered or not recovered; Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Burkholderia mallei* and *Burkholderia pseudomallei* (Glanders & Melioidiosis)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens: (801)584-8449
PATIENT PREP	N/A
SPECIMEN	Organism isolate, blood, serum, urine, abscesses, tissue aspirates, body fluids, (throat, nasal, skin or sputum for intentional release exposures)
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	72 hours
RESULTS	Recovered or not recovered; Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Clostridium botulinum* (Botulism) See also Bacteriology section for infant testing.
METHOD	Culture and toxin assay
AVAILABLE	All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Stool, enema fluid, gastric aspirate, vomitus, serum, tissue, wound, exudates, organism isolate, postmortem specimens, food and environmental samples
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	48 to 96 hours
RESULTS	Recovered or not recovered
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Coxiella burnetii* (Q-fever)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens.
PATIENT PREP	N/A
SPECIMEN	Environmental samples, organism isolate, blood, serum, nasopharyngeal swab, bronchial/tracheal washing or lesion exudate
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	48 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
ADD. INFO	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Francisella tularensis* (Tularemia)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens.
PATIENT PREP	N/A
SPECIMEN	Organism isolate, environmental samples, blood cultures, biopsied tissue, ulcer or lesion scraping or aspirate, lesion swabs, sputum, bronchial/tracheal wash, serum for serological diagnosis
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	48 hours
RESULTS	Recovered or not recovered; Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	Orthopox viruses
METHOD	N/A
AVAILABLE	All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Microscope slide touch preps, scabs, dried vesicular fluid, vesicular swabs, vesicular tissue, environmental samples
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Phone, fax, or email, as established with provider
REPORTED	Detected or not detected
ADD. INFO	Refer to UDOH Laboratory Smallpox plan on this website
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	Ricin toxin
METHOD	N/A
AVAILABLE	Ordered by Epidemiology, Local Health, Local Law, or FBI
PATIENT PREP	N/A
SPECIMEN	Environmental samples
COLLECT IN	Original container or sterile container
PROCESSING	Use universal precautions – all manipulations under a Biosafety Cabinet
TRANSPORT	Refer to Safe Handling, Packaging and Shipping Guidelines
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Identification, sample description, date of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Staphylococcus* enterotoxin B (SEB)
METHOD	N/A
AVAILABLE	Ordered by UDOH Epidemiology, Local Health, Local Law, or FBI
PATIENT PREP	N/A
SPECIMEN	Environmental samples
COLLECT IN	Original container or sterile container
PROCESSING	Use universal precautions – all manipulations under a Biosafety Cabinet
TRANSPORT	Refer to Safe Handling, Packaging and Shipping Guidelines
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Identification, sample description, date of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	Vaccinia virus
METHOD	N/A
AVAILABLE	All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Microscope slide touch preps, scabs, dried vesicular fluid, vesicular swabs
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	Refer to the Smallpox Specimen Information link on the Microbiology website (health.utah.gov/els/microbiology)
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	Varicella zoster virus (Chickenpox) See also Virology section for routine testing.
METHOD	N/A
AVAILABLE	All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Vesicular swab (cotton or Dacron polyester), scabs from crusted lesions
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	Refer to the Smallpox Specimen Information link on the Microbiology website (health.utah.gov/els/microbiology)
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	Variola virus (Smallpox)
METHOD	N/A
AVAILABLE	All Clients – Contact UDOH Epidemiology prior to submitting specimens: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Microscope slide touch preps, scabs, dried vesicular fluid, vesicular swabs, vesicular tissue
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	Refer to the Smallpox Specimen Information link on the Microbiology website (health.utah.gov/els/microbiology)
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bioterrorism

TEST	*Yersinia pestis* (Plague)
METHOD	N/A
AVAILABLE	All clients – Contact the Utah Public Health Lab prior to submitting specimens: (801)584-8449.
PATIENT PREP	N/A
SPECIMEN	Isolate of organism, environmental samples, bronchia wash, tracheal aspirate, sputum, nasopharyngeal swabs, lymph node aspirates, serum, lesion exudates, tissue smears, blood
COLLECT IN	See Appendix C
PROCESSING	See Appendix C
TRANSPORT	See Appendix C
TIME CRITICAL	Should be received in our laboratory as soon as possible
LABEL	Patient's full name or unique ID number, and date of collection or subculture
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	3 days
RESULTS	Recovered or not recovered; Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Environmental (water) Microbiology Section

TEST	Coliforms in drinking water: Total coliforms and *E. coli*
METHOD	Standard Methods 9223B (Colilert)
AVAILABLE	All clients
SOURCE PREP	See Water Bacteriological Test Request Form for detailed instructions
SPECIMEN	>100 mL water
COLLECT IN	Sterile bottle with preservative (available from Technical Services). **Do not rinse bottle or pour preservative out.**
PROCESSING	Hold on wet ice or freezer pack during transport. Preferably hold sample at less than 10 degrees C (50 degrees F). **Do not allow to freeze**.
TRANSPORT	Ship overnight or hand deliver
TIME CRITICAL	Must be received within 30 hrs of collection
LABEL	Water system number, sampling site, collector, date and time of collection (on both the sample container and test request form).
REQUISITION	Water Bacteriological Test Request Form (see form in Appendix B)
TEST COMPLETE	24 hrs from time of receipt
RESULTS	Absent – no total coliforms or *E. coli* detected Unsatisfactory – total coliform or *E. coli* positive (cfu/100mL)
REPORTED	Mail, email, or fax, as established by provider
NOTE	Do not collect from a movable faucet, through faucet screens, or aerators
CONTACT	Environmental Microbiology section

LAB TEST – Environmental (water) Microbiology Section

TEST	Coliforms in source waters: Total and fecal coliforms
METHOD	Standard Methods 9222B/9222D/9221E (Membrane filtration with confirmatory procedures)
AVAILABLE	Through the Department of Environmental Quality (DEQ)
SAMPLE PREP	Use "scoop" technique. See Coliform Test Request Form for detailed instructions.
SPECIMEN	>100 mL water
COLLECT IN	Sterile bottle with preservative (available from Technical Services). **Do not rinse bottle or pour preservative out.**
PROCESSING	Hold on wet ice or freezer pack during transport. Must hold sample at less than 10 degrees C (50 degrees F). **Do not allow to freeze**.
TRANSPORT	Hand deliver
TIME CRITICAL	Must be received within 8 hrs of collection
LABEL	Water system number, sampling site, collector, date and time of collection (on both the sample container and test request form).
REQUISITION	Coliform Test Request Form (see form in Appendix B)
TEST COMPLETE	72 hrs from time of receipt
RESULTS	Total and fecal coliforms (cfu/100 mL)
REPORTED	Electronic data transfer to DEQ
NOTE	All positives are confirmed with biochemical tests
CONTACT	Environmental Microbiology section

LAB TEST – Environmental (water) Microbiology Section

TEST	Coliforms and total bacterial count in swimming pools and spas
METHOD	Standard Methods 9223B/9215B (Colilert and Heterotropic Plate Count - HPC).
AVAILABLE	All clients
SAMPLE PREP	Use "scoop" technique. Do not collect near disinfectant input site. See Water Bacteriological Test Request Form for detailed instructions.
SPECIMEN	> 100 mL water
COLLECT IN	Sterile bottle with preservative (available from Technical Services). **Do not rinse bottle or pour preservative out.**
PROCESSING	Hold on wet ice or freezer pack during transport. Preferably hold sample at less than 10 degrees C (50 degrees F). **Do not allow to freeze**.
TRANSPORT	Ship overnight or hand deliver
TIME CRITICAL	Must be received within 30 hrs of collection
LABEL	Water system number, sampling site, collector, date and time of collection (on both the sample container and test request form).
REQUISITION	Water Bacteriological Test Request Form (see form in Appendix B)
TEST COMPLETE	48 hrs from time of receipt
RESULTS	Absent -- HPC <200 cfu/mL and total coliform/*E.coli* negative Unsatisfactory – HPC >200 cfu/mL and/or total coliform/*E.coli* positive (cfu/100mL)
REPORTED	Mail, email, or fax, as established by provider
NOTE	Pool and spa certifications completed by county health departments
CONTACT	Environmental Microbiology section

LAB TEST – Environmental (water) Microbiology & Bacteriology Sections

TEST	*Legionella sp*. in water samples
METHOD	Standard Method 9260J (Membrane filtration with confirmatory procedures)
AVAILABLE	By appointment only -- contact Environmental Microbiology (analysis performed monthly on scheduled date).
PREPARATION	Best results are obtained by monitoring the building's hot water heater
SPECIMEN	Collect >1 liter of water per site tested
COLLECT IN	Clean plastic bottle without preservative (available from Technical Services).
PROCESSING	N/A
TRANSPORT	N/A
TIME CRITICAL	Must be received the same day collected by 10:00am
LABEL	Water system number, sampling site, collector, date and time of collection (on both the sample container and test request form).
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	One week from receipt
RESULTS	*Legionella sp*. (cfu/L)
REPORTED	Mail, email, or fax, as established by provider
NOTE	Collect water from the bottom of the hot water heater
CONTACT	Environmental Microbiology section

LAB TEST – Environmental (water) Microbiology Section

TEST	Protozoa (*Cryptosporidium* and *Giardia)* in source waters
METHOD	EPA method 1623 (Filtration, Elution, and Immunomagnetic Separation Techniques)
AVAILABLE	By appointment only – contact Environmental Microbiology Section
SOURCE PREP	See Protozoa Test Request Form for detailed instructions
SPECIMEN	10 L filtered or 20 L bulk water for matrix spike analysis (see Note below)
COLLECT IN	*Envirocheck HV* filter (Pall Gelman) or clean, dry jugs
PROCESSING	Hold on wet ice or freezer pack during transport. Must hold sample at less than 8 degrees C (45 degrees F). **Do not allow to freeze**.
TRANSPORT	Ship overnight or hand deliver
TIME CRITICAL	Must be received within 24 hrs of collection
LABEL	Water system number, sampling site, collector, date and time of collection, and volume filtered (on both the sample container or filter housing and the test request form).
REQUISITION	Protozoa Test Request Form (see form in Appendix B)
TEST COMPLETE	Two weeks after receipt
RESULTS	*Cryptosporidium* and *Giardia* (oocysts/L and cysts/L)
REPORTED	Mail, email, or fax, as established with provider
NOTE	The initial run and every 20^{th} run from a water source must be collected in 20 L bulk volume for matrix spike analysis.
CONTACT	Environmental Microbiology section

LAB TEST – Immunology Section

TEST	Hantavirus IgG and IgM (Sin Nombre Virus)
METHOD	Enzyme-linked Immunosorbent Assay (ELISA)
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	> 1 mL serum
COLLECT IN	Clot tube (5, 7 or 10 mL): **Serum must be separated from the cells. Do not use serum separator tube unless you send an additional clot tube so the cells are available for testing.**
PROCESSING	Send entire blood specimen (serum and cells in separate tubes – see above). If you do not have a centrifuge, send a clot tube and serum separator tube.
TRANSPORT	Room temperature, do not freeze
TIME CRITICAL	Specimen must be received in our lab within 7 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	Test run within one week (2 weeks maximum) depending on number received
RESULTS	Negative, indeterminate, or positive
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	All positive tests are sent to CDC for confirmation
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	Hepatitis B surface antigen (HBsAg) and/or Hepatitis B surface antibody (HBsAb)
METHOD	Enzyme-linked Immunosorbent Assay (ELISA)
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	3 mL serum per test (7 or 10 mL whole blood)
COLLECT IN	Vaccutainer tube (best results from serum separator tube that is spun before shipping)
PROCESSING	Allow blood to completely clot, spin at 3000g for 10 mins to remove lipids and bacterial contaminants. Aseptically separate serum into sterile tube. If using serum separator tube, follow manufacturer's instructions and spin tube before sending to the lab. You may submit whole blood if you do not have a centrifuge. **Do not freeze whole blood**.
TRANSPORT	Room temperature, do not freeze
TIME CRITICAL	Must be received in our lab within 7 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	Tests run Wednesdays and Fridays, reported same day (except positive antigen tests, HBsAg, require confirmation before reporting)
RESULTS	Negative or positive antigen or antibody as requested
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Testing for other Hepatitis types is not available in our lab
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	Hepatitis C antibody by ELISA
METHOD	Enzyme Linked Immunosorbent Assay (ELISA)
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	Serum or plasma
COLLECT IN	Serum: Red, tiger, purple, or green topped vacutainer tube; may be collected in a serum separator tube. Plasma: Red, tiger, purple, or green topped vacutainer tube; EDTA, Potassium Oxalate, or Heparin anticoagulants may be used.
PROCESSING	Centrifuge and remove the serum or plasma from the red cells as soon as possible. If stored, store at 2-8 degrees C up to 14 days. If storage needs are longer than 14 days, freeze at less than minus 10 degrees C. Do not freeze the serum or plasma on the red cells.
TRANSPORT	Room temperature
TIME CRITICAL	Must be received by our lab within 7 days of collection
LABEL	Patient's full name or unique ID number, and date of collection
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	Test is run once a week with 24 hour turn around, unless the test is reactive and needs to be repeated.
RESULTS	Non-reactive, or repeatedly reactive
REPORTED	Phone, fax, mail, or e-mail, as established with provider
NOTE	Repeatedly reactive specimens should have a follow-up confirmation test done by PCA or RIBA (not currently performed at our lab).
CONTACT	(801)584-8452, Immunology section

LAB TEST – Immunology Section

TEST	HIV 1 (screen and confirmation)
METHOD	Screen = Enzyme-linked Immunosorbent Assay (ELISA) **C**onfirmation = Western Blot (WB)
AVAILABLE	All clients
PATIENT PREP	Use aseptic blood collection technique
SPECIMEN	2 mL serum, or transudate fluid swab in OraSure collection kit
COLLECT IN	Vaccutainer tube (best results from serum separator tube that is spun before shipping). Transudate fluid = OraSure collection kit available from UDOH Epidemiology.
PROCESSING	Allow blood to completely clot, spin at 3000g for 10 mins to remove lipids and bacterial contaminants. Aseptically separate serum into sterile tube. If using serum separator tube, follow manufacturer's instructions and spin tube before sending to the lab. You may submit whole blood if you do not have a centrifuge. **Do not freeze whole blood**. For transudate fluid follow instructions included in OraSure kit.
TRANSPORT	Room temperature (do not freeze)
TIME CRITICAL	Must be received in our lab within 7 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	HIV Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	ELISA tests are run Tuesdays and Thursdays. Negatives are reported the same day. Positives require confirmation testing (WB) that is performed once a week. WB results are available the day following the run.
RESULTS	Negative = non-reactive, positive = reactive with the WB results, indeterminate = new specimen should be submitted
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	HIV 2 is not currently available in our lab. All positive ELISAs are repeated. If there are conflicting results, a repeat specimen is requested. All specimens that are ELISA reactive on repeat are automatically confirmed by WB. **OraSure cannot be done on patients under 13 years of age.**
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	Measles (Rubeola)
METHOD	IgM antibody by Enzyme Immuno-assay (EIA)
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	>1 mL serum/whole blood (only when no centrifuge is available)
COLLECT IN	Vaccutainer tube (best results from serum separator tube that is spun before shipping)
PROCESSING	Allow blood to completely clot, spin at 3000g for 10 mins to remove lipids and bacterial contaminants. Aseptically separate serum into sterile tube. If using serum separator tube, follow manufacturer's instructions and spin tube before sending to our lab. You may submit whole blood if you do not have a centrifuge. **Do not freeze whole blood**.
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 5 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	Seven days from receipt in our lab
RESULTS	Negative, positive, or borderline positive
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Hemolysed or lipemic serum give false test results. A second specimen 2 to 3 weeks after the first is required for all borderline positive patients.
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	SARS-associated Corona virus (Total Antibody) See also Molecular Biology section.
METHOD	ELISA (Enzyme-linked Immunosorbent Assay)
AVAILABLE	All Clients – A consultation with UDOH Epidemiology is required prior to submitting specimens: (801) 538-6191.
PATIENT PREP	Use aseptic collection technique
SPECIMEN	> 1 ml serum
COLLECT IN	Clot tube (5, 7, or 10 ml). Serum must be separated from the cells.
PROCESSING	Send entire blood specimen
TRANSPORT	Room temperature. Do not freeze.
TIME CRITICAL	Specimen must be received within 7 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B) **AND** a Patient Consent Form (available from UDOH Epidemiology).
TEST COMPLETE	Within 1 week
RESULTS	Negative or positive for corona virus
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Acute serum should be drawn 7-10 days after onset of symptoms. A negative acute specimen does not rule out presence of virus. A convalescent sample must be drawn >28 days after onset of symptoms. A negative result from the convalescent sample is not consistent with corona virus infection.
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	Syphilis Rapid Plasmin Reagin (RPR)
METHOD	Enzyme Immuno-assay (EIA)
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	>1 mL serum/whole blood
COLLECT IN	Vaccutainer tube (best results from serum separator tube that is spun before shipping)
PROCESSING	Allow blood to completely clot, spin at 3000g for 10 mins to remove lipids and bacterial contaminants. Aseptically separate serum into sterile tube. If using serum separator tube, follow manufacturer's instructions and spin tube before sending to the lab. You may submit whole blood if you do not have a centrifuge. **Do not freeze whole blood**.
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 5 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	Negative = 5 days from receipt in our lab Positive = one week (confirmation testing required)
RESULTS	Negative or reactive with dilution titer (i.e., reactive 1:4)
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Hemolysed or lipemic serum give false test results. Positive specimens will be tested by FTA.
CONTACT	Immunology section

LAB TEST – Immunology Section

TEST	Syphilis Fluorescent Treponemal Antibody (FTA-DS)
METHOD	Direct fluorescent stain of antibody/antigen reaction
AVAILABLE	All clients (**on positive RPR samples only**)
PATIENT PREP	Use aseptic collection technique
SPECIMEN	>1 mL serum/whole blood
COLLECT IN	Vaccutainer tube (best results from serum separator tube that is spun before shipping)
PROCESSING	Allow blood to completely clot, spin at 3000g for 10 mins to remove lipids and bacterial contaminants. Aseptically separate serum into sterile tube. If using serum separator tube, follow manufacturer's instructions and spin tube before sending to the lab. You may submit whole blood if you do not have a centrifuge. **Do not freeze whole blood**.
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 48 hours of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Immunology/Serology Test Request Form (see form in Appendix B)
TEST COMPLETE	One week after RPR test is completed
RESULTS	Negative, minimal reactive, or reactive
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Hemolysed or lipemic serum give false test results. A minimal result = indeterminate, recommend the patient be retested.
CONTACT	Immunology section

LAB TEST – Molecular Biology Section

TEST	*Bordetella pertussis* PCR (pertussis, whooping cough) See also Bacteriology section.
METHOD	Polymerase Chain Reaction (PCR)
AVAILABLE	All clients
PATIENT PREP	Best if collected following a coughing spasm
SPECIMEN	Nasopharyngeal swab, aspirate, or washing
COLLECT IN	Cotton or dacron swab = sterile tube Fluids = sterile, screw capped container
PROCESSING	Do not place swabs in transport media, send dry or in saline. Do not use calcium alginate swabs or charcoal based medium.
TRANSPORT	Keep at 2 – 8 degrees C
TIME CRITICAL	Must be received in our lab within 48 hrs of collection
LABEL	Patient's full name or unique ID number, date of collection, and "PCR pertussis"
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hrs after receipt in our lab
RESULTS	Positive or negative for *Bordetella pertussis*
REPORTED	Positive results are phoned to client; all results are mailed, e-mailed, or faxed, as established with the provider
NOTE	Throat and nasal swabs are unacceptable samples
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Molecular Biology Section

TEST	Pulse Field Gel Electrophoresis (PFGE)
METHOD	Gel electrophoresis
AVAILABLE	Through UDOH Epidemiology or by special arrangement with the Utah Public Health Laboratory (Molecular Biology section). For ORSA: Special arrangement made with UDOH Epidemiology: (801)538-6191.
PATIENT PREP	N/A
SPECIMEN	Pure culture of organism to be tested. For *Staphylococcus aureus*: Organism MUST be oxacillin resistant.
COLLECT IN	Culture plate or slant
PROCESSING	Fresh subculture of the organism
TRANSPORT	Room temperature
TIME CRITICAL	Hand deliver or send overnight delivery
LABEL	Patient's full name or unique ID number, organism, subculture date, PFGE (for food isolates label with food source instead of patient name)
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	3 working days
RESULTS	Molecular pattern
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Bacterial isolate must be earliest possible subculture. Each passage may alter the genetic pattern.
CONTACT	(801)584-8449: Jenni Wagner

LAB TEST – Molecular Biology Section

TEST	SARS corona virus (Severe Acute Respiratory Syndrome) See also Immunology section for serological testing.
METHOD	Polymerase Chain Reaction (PCR). For SARS Serology testing, refer to the Immunology Section.
AVAILABLE	All Clients – A consultation with UDOH Epidemiology is required prior to submitting specimens: (801) 538-6191. Please complete Patient Consent form and send with specimens.
PATIENT PREP	N/A
SPECIMEN	Oropharyngeal or nasopharyngeal swabs, oropharyngeal wash, sputum, sera, plasma, stool.
COLLECT IN	Sterile containers. Swabs should be placed in tube without transport medium.
PROCESSING	N/A
TRANSPORT	Specimens should be kept cold. If shipping, ship on wet ice within 48 hr, if shipping is delayed, freeze and ship on dry ice.
TIME CRITICAL	Should be received at our laboratory as soon as possible
LABEL	Patient's full name or unique identifier, and date of collection.
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	24 hours
RESULTS	Detected or not detected
REPORTED	Phone, fax, or email, as established with provider
ADD. INFO	UDOH Lab cannot test specimens without prior Epidemiology consult and a Patient Consent Form.
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Immunology or Molecular Biology Sections

TEST	West Nile Virus (Human) IgM ELISA St. Louis Encephalitis Virus (Human) IgM ELISA
METHOD	Enzyme Linked Immunosorbent Assay (ELISA)
AVAILABLE	Prior to submitting specimen, contact UDOH Epidemiology at (801)538-6191.
PATIENT PREP	Symptoms, vaccinations, and travel history
SPECIMEN	Serum or cerebrospinal fluid
COLLECT IN	N/A
PROCESSING	Serum: refrigerate (freeze if transport delayed) CSF: refrigerate if transport delayed
TRANSPORT	Serum: refrigerate during transport (freeze if transport delayed) CSF: refrigerate if transport delayed
TIME CRITICAL	Within 12 hrs of collection
LABEL	Patient's full name or unique ID number, date of collection, and date of onset of symptoms
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	72 hrs after receipt in our lab
RESULTS	WNV or SLE antibody detected by ELISA; WNV or SLE not detected by ELISA
REPORTED	Phone, fax, or email, as established with provider
NOTE	If initial serum specimen was collected within 9 days of onset of symptoms, a convalescent serum will be requested for IgM negative tests.
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Molecular Biology Section

TEST	West Nile Virus, St. Louis Encephalitis Virus, or Western Equine Encephalitis Virus
METHOD	Polymerase Chain Reaction (PCR)
AVAILABLE	Contact UDOH Epidemiology at (801)538-6191 or Division of Wildlife Resources at (801) 538-4767 for submitting avian oral swabs and dead bird reports.
PATIENT PREP	N/A
SPECIMEN	Mosquitoes = 10-50 insects, available Mosquito Abatement Districts. Avian oral swabs. Bird or horse tissues = 1 cubic centimeter brain, spleen, or heart .
COLLECT IN	Mosquitoes = tubes from Mosquito Abatement District. Swabs = Ziploc bags; outer bag must be clean. Tissue = sterile, leak proof container.
PROCESSING	Keep mosquitoes and tissue samples at 2 - 8 degrees C. Avian oral swabs at ambient temperature.
TRANSPORT	On wet ice or in mailer
TIME CRITICAL	Within 48 hrs of collection
LABEL	Location and date of collection. Species of source animal.
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	48 hrs after receipt in our lab
RESULTS	Virus detected by PCR; virus not detected by PCR
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	N/A
CONTACT	(801)584-8449: Jana Coombs or Kim Christensen.

LAB TEST – Bacteriology (Mycobacteriology) Section

TEST	Acid fast bacillus stain (AFB smear)
METHOD	Auramine-O (fluorescent), confirmatory = Kinyoun cold acid fast stain
AVAILABLE	All clients
PATIENT PREP	Sputum = collect early morning specimen from deep, productive cough (have patient rinse mouth with water just prior to collection). Sterile body sites, use sterile collection technique. Urine = collect with aseptic culture technique.
SPECIMEN	All specimens submitted for culture will have a direct stain performed (except blood). Material submitted on clean glass slides thinly smeared and air-dried will be accepted for staining.
COLLECT IN	Blood = yellow or green top vacutainer tube Bronchial washing, lavage, sputum = sterile 50 mL screw cap conical tube (available from Tech Services) Bronchial brush, CSF, body fluids, feces, tissue, urine = sterile container
PROCESSING	Avoid tap water on any instrument used in a procedure as it may contain AFB. Submit tissue in sterile saline.
TRANSPORT	Room temperature. Glass slides must be sent in such a manner as to prevent breakage during transport.
TIME CRITICAL	Must be received in our lab within 5 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Within 24 hrs of receipt in our lab
RESULTS	Negative for acid fast bacilli, or Positive with the number of acid fast bacilli per high power field
REPORTED	All positive results are phoned. Preliminary positive and negative reports are mailed, e-mailed, or faxed, as established with the provider
NOTE	All positive fluorescent smears are confirmed with a permanent staining method (Kinyoun)
CONTACT	TB section (Bacteriology/Mycobacteriology)

LAB TEST – Bacteriology (Mycobacteriology) Section

TEST	Acid fast bacilli (AFB) culture and susceptibility
METHOD	Rapid, liquid culture; standard media culture
AVAILABLE	All clients
PATIENT PREP	Sputum = collect early morning specimen from deep, productive cough (have patient rinse mouth with water just prior to collection). Sterile body sites, use aseptic collection technique. Urine = collect with aseptic culture technique (clean catch).
SPECIMEN	Blood = 7 to 10 mL Bronchial washing, lavage = >5 mL, brush = send entire brush CSF = >5 mL, other body fluids >2 mL Feces, tissue = 1 gm Sputum = 5 to 10 mL early morning specimen Urine = entire first morning void
COLLECT IN	Blood = yellow or green top vacutainer tube Bronchial washing, lavage, sputum = sterile 50 mL screw cap conical tube (available from Technical Services) Bronchial brush, CSF, body fluids, feces, tissue, urine = sterile, leak proof container
PROCESSING	Avoid tap water on any instrument used in a procedure as it may contain AFB. Submit tissue in sterile saline.
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 5 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Negative = 7 weeks, Positive depends on organism (preliminary positive reports sent when AFB growth is detected)
RESULTS	No AFB isolated (negative), or Genus and species/complex (positive)
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	**Do not use any transport media**. Leaking specimens will be rejected. Susceptibility testing will be done on all *M. tuberculosis* complex isolates.
CONTACT	TB section (Bacteriology/Mycobacteriology)

LAB TEST – Bacteriology (Mycobacteriology) Section

TEST	Referred acid fast bacilli (AFB) identification and susceptibility
METHOD	DNA probes, standard biochemicals, high pressure liquid chromatography (HPLC)
AVAILABLE	All clients
PATIENT PREP	N/A
SPECIMEN	Pure culture AFB, Bactec bottle, or MGIT tube
COLLECT IN	Agar slant or tube, Bactec bottle, MGIT tube
PROCESSING	None
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 5 days of growth
LABEL	Patient's full name or unique ID number, and submission date
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	Variable depending on organism
RESULTS	Genus and species/complex of AFB isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Isolate must be packaged to meet DOT dangerous goods regulations. Susceptibility testing will be performed on *Mycobacterium tuberculosis* complex isolates only.
CONTACT	TB section (Bacteriology/Mycobacteriology)

LAB TEST – Newborn Screening Section

TEST	Congenital hypothyroidism (CH); Galactosemia (GAL); Hemoglobin variants (Hb); Phenylketonuria (PKU)
METHOD	CH = Time Resolved Fluorometry (TRF); GAL = Fluometric; Hb = Isoelectric Focusing Electrophoresis (IEF); PKU = fluorescent ninhydrin
AVAILABLE	All clients
PATIENT PREP	Warm heel or finger 3–5 minutes with a warm, moist, soft cloth. Cleanse the skin with an alcohol prep. Wipe the skin dry with a sterile gauze pad.
SPECIMEN	Whole blood placed onto multiple filter paper circles
COLLECT IN	Special filter paper available from Technical Services only
PROCESSING	Dry filter paper blood spots on clean, dry, flat surface for at least 4 hrs
TRANSPORT	Dried spots may be mailed in the envelope from the collection kit
TIME CRITICAL	Specimen must be received in our lab within 1 week of collection
LABEL	Kits are pre-labeled with a unique ID number which is on the filter paper specimen.
REQUISITION	Utah Department of Health Newborn Screening form: First Screen, Second Screen, and/or Miscellaneous Screen. **The specimen cannot be processed unless all the information requested on the form is provided.**
TEST COMPLETE	Normal = 2 working days; Abnormal = requires confirmation testing with varying completion times
RESULTS	CH: Normal or Abnormal in µg/dL GAL: Normal or Abnormal in Units/gHb Hb: Normal or Variant PKU: Normal or Abnormal in mg/dL
REPORTED	Mail, e-mail, or fax, as established with client
NOTE	Do not apply a second drop of blood to any circle not completely filled. "First" specimens are to be collected within 24 hours of birth. "Second" specimens are to be collected 2 weeks after the first. GAL is heat sensitive and should be kept out of extreme heat. If the CH is abnormally low, a TSH will be done automatically.
CONTACT	Newborn Screening section

LAB TEST – Newborn Screening Section

TEST	Diet monitoring (PKU)
METHOD	Fluorescent ninhydrin
AVAILABLE	Arranged with PCMC through Newborn Screening Program Coordinator
PATIENT PREP	Warm the heel or finger 3 – 5 mins with a warm, moist, soft cloth. Cleanse the skin with an alcohol prep. Wipe the skin dry with a sterile gauze pad.
SPECIMEN	Whole blood placed onto multiple filter paper circles
COLLECT IN	Special filter paper available from Technical Services only
PROCESSING	Dry filter paper blood spots on clean, dry, flat surface for at least 4 hrs
TRANSPORT	Dried spots may be mailed in the envelope from the collection kit
TIME CRITICAL	Specimens should be received as soon as possible for the benefit of the patient
LABEL	Kits are pre-labeled with a unique ID number which is on the filter paper specimen.
REQUISITION	Utah Dept. of Health Newborn Screening form: PKU Diet Monitoring **The specimen cannot be processed unless all the information requested on the form is provided.**
TEST COMPLETE	Three working days after receipt in our lab
RESULTS	mg/dL
REPORTED	Mail, e-mail, or fax, as established with client
NOTE	Do not apply a second drop of blood to any circle not completely filled.
CONTACT	Newborn Screening section

LAB TEST – Bacteriology (Parasitology) Section

TEST	*Cryptosporidium parvum* and *Giardia lamblia* (fecal parasites, O & P)
METHOD	Antigen detection by Enzyme-linked Immunosorbent Assay (ELISA)
AVAILABLE	Local health departments
PATIENT PREP	If a patient has had a barium gastro/enteric procedure, wait at least 72 hrs before collecting a specimen
SPECIMEN	Feces
COLLECT IN	FP vial containing 10% formalin available from Technical Services
PROCESSING	Add specimen to red fill line and mix well with preservative
TRANSPORT	Room temperature, may be refrigerated
TIME CRITICAL	Specimen must be received within 5 days of collection
LABEL	Patient's full name or unique ID number, date and time of collection
REQUISITION	Bacteriology/Bioterrorism/Molecular Diagnostics/TB Test Request Form (see form in Appendix B).
TEST COMPLETE	One week following receipt in our laboratory
RESULTS	*Giardia* or *Cryptosporidium* detected [positive], or No *Giardia* or *Cryptosporidium* detected [negative]
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Do not use a collection container that has exceeded the expiration date printed on the tube.
CONTACT	Bacteriology section

LAB TEST – Virology Section

TEST	*Chlamydia trachomatis* or *Neiserria gonorrhea* (GC) amplified
METHOD	Amplified antigen detection
AVAILABLE	All clients
PATIENT PREP	Clean prep urogenital area as for standard culture collection Urine = standard clean catch procedure
SPECIMEN	Urogenital = swab Urine = 20 mL, first morning specimen.
COLLECT IN	Urogenital = special collection kit available from Technical Services Urine = sterile, screw capped container
PROCESSING	Keep urine at 2 to 8 degrees C
TRANSPORT	Swabs = room temperature Urine = on wet ice
TIME CRITICAL	Must be received in our lab within 48 hrs of collection (urine kept continuously at 2 to 8 degrees C may be received within 6 days)
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	CT/GC Test Request Form (see form in Appendix B)
TEST COMPLETE	Tests done Tuesdays and Fridays. Results available after 4 pm on test day.
RESULTS	Negative, indeterminate, or positive
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Client may order Chlamydia, GC, or both tests from the same swab or urine specimen
CONTACT	Virology section

LAB TEST – Virology Section

TEST	*Chlamydia trachomatis* or *Neiserria gonorrhea* (GC) non-amplified
METHOD	Genprobe
AVAILABLE	All clients
PATIENT PREP	Clean prep urogenital area as for standard culture collection
SPECIMEN	Urogenital or conjuctival swabs
COLLECT IN	Special collection kits available from Technical Services
PROCESSING	Follow kit instructions
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 7 days of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	CT/GC Test Request Form (see form in Appendix B)
TEST COMPLETE	Tested daily, available same day after 4 pm
RESULTS	Negative or positive
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Client may order Chlamydia, GC, or both tests from the same swab. Do not use kit beyond expiration date printed on the tube.
CONTACT	Virology section

LAB TEST – Virology Section

TEST	Colorado tick fever
METHOD	Cell culture
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	Whole blood
COLLECT IN	Clot tube (5, 7 or 10 mL)
PROCESSING	Send entire tube
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 72 hrs of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	One week from receipt in our lab
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

LAB TEST – Virology Section

TEST	Cytomegalic virus (CMV)
METHOD	Cell culture
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique, urine = clean catch
SPECIMEN	Bronchial alveolar lavage, buffy coat, urine
COLLECT IN	Sterile, leak proof container
PROCESSING	Keep at 2 to 8 degrees C
TRANSPORT	On wet ice
TIME CRITICAL	Must be received in our lab within 48 hrs of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	Three days from culture set up in our lab
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

LAB TEST – Virology Section

TEST	Enteroviruses
METHOD	Cell culture
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	Relevant to symptoms (CSF, feces, skin lesions, throat washings)
COLLECT IN	Sterile, leak proof container
PROCESSING	Keep specimen at 2 to 8 degrees C
TRANSPORT	On wet ice
TIME CRITICAL	Must be received in our lab within 72 hrs of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	Two to four weeks
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

LAB TEST – Virology Section

TEST	*Herpes simplex* virus (Herpes)
METHOD	Cell culture
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	Lesion swab, vesicular fluid, or tissue biopsy
COLLECT IN	Commercial sterile swab collection kit, viral transport system, or sterile tissue biopsy container
PROCESSING	Refrigerate immediately after collection
TRANSPORT	On wet ice
TIME CRITICAL	Must be received in our lab within 72 hrs of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	Negative = 7 days from receipt in lab Positive = <7 days (actual date of growth)
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

LAB TEST – Virology Section

TEST	Rabies (animal specimens only)
METHOD	Fluorescent antibody (FA)
AVAILABLE	Local health departments or animal control agencies only
PATIENT PREP	Animal must be euthanized
SPECIMEN	Bats = entire animal Other animals = head only
COLLECT IN	Leak proof container
PROCESSING	Keep at 2 to 8 degrees C
TRANSPORT	On wet ice
TIME CRITICAL	Must be received in our lab within 72 hrs
LABEL	Unique identification number, “rabies exam”, and collection date
REQUISITION	Rabies Test Request Form (see form in Appendix B)
TEST COMPLETE	Next working day
RESULTS	Negative or positive for Rabies by FA
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Testing is not performed on rodents
CONTACT	Virology section

LAB TEST – Virology Section

TEST	Respiratory Virus Screen (Adenovirus; Influenza A or B; Parainfluenza 1, 2 or 3; Respiratory Syncytial Virus [RSV]).
METHOD	Cell culture and/or DFA
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique
SPECIMEN	Nasopharyngeal swab (NP) or washing
COLLECT IN	Swab = viral transport media. Washing = sterile, leak proof container.
PROCESSING	Hold samples at 2 to 8 degrees C after collection
TRANSPORT	Room temperature
TIME CRITICAL	Must be received in our lab within 72 hrs of collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	Three days after receipt in our lab
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

LAB TEST – Virology Section

TEST	*Varicella zoster* (chicken pox, VZV) See also Bioterrorism section.
METHOD	Cell culture
AVAILABLE	All clients
PATIENT PREP	Use aseptic collection technique, clean skin with isopropanol
SPECIMEN	Lesion swab or vesicle fluid
COLLECT IN	Sterile leak proof container, syringe with needle capped, or swab in viral transport media
PROCESSING	Keep at 2 to 8 degrees C
TRANSPORT	On wet ice
TIME CRITICAL	Must be received in our lab < 24 hrs after collection
LABEL	Patient's full name or unique ID number, and collection date
REQUISITION	Virus Culture Test Request Form (see form in Appendix B)
TEST COMPLETE	Negative = 15 days, positive = as soon as there is growth
RESULTS	Virus isolated or not isolated
REPORTED	Mail, e-mail, or fax, as established with provider
NOTE	Cultures are not set up on weekends or holidays
CONTACT	Virology section

APPENDIX A
COMPLETE TEST LIST - ALPHABETICAL

APPENDIX A (continued)
COMPLETE TEST LIST - ALPHABETICAL

APPENDIX A (continued)
COMPLETE TEST LIST - ALPHABETICAL

APPENDIX B
REQUISITIONS – Test Request Forms

Blank request forms WITH YOUR CUSTOMER ID code are available from Technical Services. ALL INFORMATION MUST BE PROVIDED (incomplete requisitions cannot be processed).

BACTERIOLOGY / BIOTERRORISM / MOLECULAR DIAGNOSTICS / TB TEST REQUEST FORM

STATE OF UTAH PUBLIC HEALTH LABORATORIES

46 NORTH MEDICAL DRIVE

SALT LAKE CITY, UTAH 84113-1105

TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

http://health.utah.gov/lab/microbiology

FOR LABORATORY USE ONLY

LAB#:

DATE STAMP:

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:

Patient Name (Last, First):

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy) _____/_____/_____	**AGE:**	**SEX:** M F

PROVIDER INFORMATION:	**Physician**: _____	**SPECIMEN COLLECTION DATE**
Provider Code:	**Provider Phone:** _____	(mm/dd/yy)
	Provider Email: _____	_____/_____/_____
	Secure Fax #: _____	

SPECIMEN SOURCE/SITE:

- [ ] Blood
- [ ] Bronchial Wash
- [ ] Cerebrospinal Fluid (CSF)
- [ ] Cervix
- [ ] Environmental (specify):_____
- [ ] Fluid (specify): _____
- [ ] Food (specify): _____
- [ ] Isolate (source):_____
- [ ] Lesion
- [ ] Nasopharyngeal (specify: swab / wash / aspirate)
- [ ] Scab
- [ ] Serum
- [ ] Skin
- [ ] Sputum (specify: natural / induced)
- [ ] Swab (specify):_____
- [ ] Stool
- [ ] Throat
- [ ] Tissue (specify): _____
- [ ] Urethra
- [ ] Urine
- [ ] Vagina
- [ ] Vomitus
- [ ] Wound/Abscess
- [ ] Other (specify):_____

STATE OF ORIGIN OF PATIENT / SAMPLE

_____

BACTERIOLOGY / TB TESTS:

- [ ] Bacterial Culture
- [ ] Bacterial ID / Referral
- [ ] Cryptosporidium
- [ ] Giardia
- [ ] Mycobacterial Culture
- [ ] Mycobacterial ID / Referral
- [ ] Other (specify): _____

MOLECULAR TESTS:

- [ ] Bordetella pertussis PCR
- [ ] Influenza A & B Virus PCR (**NO** H subtyping)
- [ ] Influenza A & B Virus PCR (with H subtyping)
- [ ] Norovirus PCR
- [ ] SARS PCR
- [ ] St. Louis Encephalitis Virus PCR
- [ ] West Nile Virus PCR
- [ ] Western Equine Encephalitis PCR
- [ ] Human West Nile Virus IgM
- [ ] Other (specify): _____

BIOTERRORISM TESTS (include Chain of Custody Form, If Applicable):

- [ ] Bacillus anthracis
- [ ] Burkholderia spp.
- [ ] Brucella spp.
- [ ] Coxiella burnetii
- [ ] Francisella tularensis
- [ ] Orthopox virus
- [ ] Vaccinia virus
- [ ] Varicella zoster virus
- [ ] Variola virus
- [ ] Yersinia pestis
- [ ] Multiagent Screen
- [ ] Brucella spp.Microagglutination
- [ ] Francisella tularensis Microagglutination
- [ ] Yersinia pestis Hemagglutination
- [ ] Clostridium botulinum culture & toxin
- [ ] Ricin toxin (non-clinical)
- [ ] Staphylococcus Enterotoxin B (non-clinical)
- [ ] BDS Testing
- [ ] Other (specify): _____

ADDITIONAL INFORMATION

(List pertinent information including presumptive ID)

PLEASE PRINT

Standard Methods 9222B/9222D

COLIFORM TEST REQUEST FORM

STATE OF UTAH PUBLIC HEALTH LABORATORY
46 NORTH MEDICAL DRIVE, SALT LAKE CITY, UTAH 84113

Lab Number: _____

WATER SYSTEM NO: _____ SOURCE NO:_____

Cost Code: _____

WATER SYSTEM NAME:_____ Special Code: _____

Customer ID #_____

COLLECTED BY:_____ **DATE COLLECTED:**_____ **TIME COLLECTED:**_____
mm/dd/yy 24hr CLOCK

EXACT DESCRIPTION OF SAMPLING POINT:_____

_____

If Change of address is needed, indicate below:

Send Report To: _____ Phone No:

ADDRESS: _____ CITY: _____ STATE: _____ZIP:
==========

Send Bill To_____ Phone No:

ADDRESS: _____ CITY: _____ STATE: _____ZIP:

SOURCE WATER TESTING

Samples must be collected in a sterile 100 mL container.

Fill bottle at least to the neck for 100 mL volume. Do not rinse or over fill.

Samples must be shipped or delivered in coolers using wet ice or freezer packs, be careful not to allow samples to freeze. Sample receipt temperature must not exceed 10 degrees C.

Samples must arrive at the Lab within 24 hours of the time of collection.

Any questions, call the Environmental Microbiology Lab at 801-584-8400

SEND SAMPLE TO: STATE OF UTAH PUBLIC HEALTH LABORATORY
46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113

CT/GC TEST REQUEST FORM (Virology)

State of Utah Public Health Laboratory
46 N Medical Dr. SLC, Utah 84113-1105
Telephone: (801) 584-8400
Fax: (801) 584-8486

For Laboratory use only:
Lab#:

PLEASE PRINT CLEARLY

TESTING WILL NOT BE PERFORMED UNLESS THIS FORM IS COMPLETELY FILLED OUT.

Patient Information **Date of Birth**:

Gender: [ ] F [ ] M (mm/dd/yy): _____/_____/_____

Patient's Name (Last, First)

Patient ID#: _____

Provider Information

Provider Code:

Date of Collection:_____/_____/_____
Physician: _____
Provider Phone: _____
Provider email: _____

Specimen Data

[ ] Cervical (CV) [ ] Vaginal (VS)
[ ] Urethral (US) [ ] Urine (U)

Chlamydia and Gonorrhea Testing Method

[ ] Genprobe [ ] Nucleic Acid Amplication

Test For:

[ ] Gonorrhea [ ] Chlamydia [ ] **Both**

Patient's Residence Zip Code:

For Laboratory use only:
Date Received:

Race

[ ] White [ ] Asian
[ ] Black [ ] Other
[ ] Native American [ ] Unknown

Ethnicity

[ ] Hispanic
[ ] Non-Hispanic
[ ] Unknown

Reason For Exam (Check all that apply)

[ ] Symptomatic
[ ] Routine Exam (no symptoms)
[ ] Exposed to Chlamydia, Non-Gonococcal Urethritis
[ ] Exposed to Gonorrhea
[ ] Exposed to other STD

Clinical Signs (Check all that apply)

[ ] Cervical Friability [ ] PID [ ] None
[ ] Mucopus [ ] Urethritis

Risk History (Check all that apply)

[ ] >1 partner in past 90 days
[ ] New partner in past 90 days
[ ] Previous positive Chlamydia past 12 months
[ ] None of the above

Treatment

Patient presumptively treated for Chlamydia [ ] Yes [ ] No

HIV SEROLOGY CHAIN OF CUSTODY/TEST REQUEST FORM

FOR LABORATORY USE ONLY
LAB#:

DATE STAMP:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:
Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:		**SPECIMEN COLLECTION DATE**
Provider Code:	**Physician**: _____	(MM/DD/YY)
	Provider Phone: _____	
	Provider Email: _____	
	Secure Fax #: _____	_____/_____/_____

CHAIN OF CUSTODY INFORMATION:

Patient/sample state of origin:

[ ] Information on Supplemental Chain of Custody Record.

RECORD NUMBER: _____

Collected by: _____

Date Collected (mm/dd/yy): _____/_____/_____

Time of Collection: _____

Specimen Sealed by: _____

Date Sealed (mm/dd/yy): _____/_____/_____

Time Sealed: _____

Transport Container Sealed by: _____

Date Sealed (mm/dd/yy): _____/_____/_____

Time Sealed: _____

HIV SEROLOGY TEST REQUEST FORM

FOR LABORATORY USE ONLY

LAB#:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

DATE STAMP:

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:

Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:		**SPECIMEN COLLECTION DATE**
Provider Code:	**Physician**: _____	(MM/DD/YY)
	Provider Phone: _____	
	Provider Email: _____	
	Secure Fax #: _____	_____/_____/_____

STATE OF ORIGIN OF PATIENT/SAMPLE

_____

SPECIMEN DATA:

Risk Factors:

[ ] IV Drug Abuse (27)
[ ] Sexual (28)
[ ] Transfusion (29)
[ ] Work Related (30)
[ ] Drug Abuse Partner (37)
[ ] MSM (Bi sexual-Gay) (38)
[ ] MSM (IDU) (39)

[ ] 1st Specimen (1)
[ ] 2nd Specimen (2)

TEST ORDERED:

[ ] HIV Antibody (33)
[ ] Referred for Supplemental Testing (33, 34)
[ ] HIV (35) & HBsAb (14) & HCVAb (18) (EMS Employment Screen)

IMMUNOLOGY/SEROLOGY TEST REQUEST FORM

FOR LABORATORY USE ONLY
LAB#:

DATE STAMP:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:
Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:		**SPECIMEN COLLECTION DATE**
Provider Code:	**Physician**: _____ **Provider Phone:** _____ **Provider Email:** _____ **Secure Fax #:** _____	(MM/DD/YY) _____/_____/_____

Syphilis Serology

[ ] RPR (1, 2)
- [ ] 1st Specimen (1) [ ] 2nd Specimen(2)
- [ ] Previous Positive RPR (3)
- [ ] Previous Positive FTA (11)
- [ ] Contact (4)
- [ ] Prenatal (8)

[ ] FTA-ABS (2, 4)

STATE OF ORIGIN OF PATIENT/SAMPLE

_____

Miscellaneous Serology:

[ ] HBsAg (antigen) (5)
[ ] HbsAb (antibody) (13, 14)
[ ] HCVAb (antibody) (18)
[ ] Hantavirus (Sin Nombre) (55)
[ ] SARS (Total Antibody) (60)
[ ] St. Louis Encephalitis Virus (IgM)
[ ] West Nile Virus (IgM)

[ ] Other*
Specific Agent Suspected: _____

***(Please call the Immunology Laboratory at 584-8400 for special instruction and/or availability before ordering.)**

Date of Onset (mm/dd/yy): _____/_____/_____

Specimen Information:

[ ] Acute serum
drawn on (mm/dd/yy): _____/_____/_____

[ ] Convalescent serum
drawn on (mm/dd/yy): _____/_____/_____

ADDITIONAL INFORMATION
(List pertinent information including presumptive ID)

_____
_____
_____
_____
_____
_____

OB_____
[CDC Use Only]

CENTERS FOR DISEASE CONTROL AND PREVENTION

REPORTING SYSTEM FOR OUTBREAKS OF SUSPECTED VIRAL GASTROENTERITIS

FOR OFFICIAL USE ONLY

Viral Gastroenteritis Section
DASH Unit 75
Centers for Disease Control and Prevention
1600 Clifton Road, N.E., Mailstop G-04
Atlanta, GA 30333

Telephone (404) 639-3577
Facsimile (404) 639-3645
Epi On Call (404) 639-3607
Epi Pager (404) 278-0514

General Information Date ____/____/____ (mm dd yyyy)

Primary contact person for epidemiologic investigation _____

Address _____ Telephone _____

_____ Facsimile _____

_____ Email _____

State Outbreak Identification Number _____
EFORS statecode _____

Outbreak Information

Date of first case ____/____/____ (mm dd yyyy) Date health department notified ____/____/____ (mm dd yyyy)

Date of last case ____/____/____ (mm dd yyyy) Outbreak ongoing? Yes No

Location(s) of outbreak City _____ County _____

City _____ County _____

Institution or event (if applicable) _____ Date of event ____/____/____ (mm dd yyyy)
[e.g., nursing home, restaurant, bus tour, wedding, catered meal]

Institution or event contact person _____ Telephone _____

Illness Characteristics

Number of persons ill _____ Number of persons susceptible _____ Duration of illness (mean/median and range) _____ Incubation of illness (mean/median and range) _____

Predominant symptoms (frequencies if available)_____

Number of persons who sought medical care _____ Number of persons admitted to a hospital _____
(e.g., emergency room, doctor's office, medical clinic)

Suspected source(s) of exposure _____
e.g., water, specific food(s), ice, person, object]

Specimen Collection

Contact person for specimen collection and handling _____

Telephone _____ Facsimile _____

Number of stool specimens collected _____ Number of vomitus specimens collected _____

Tested for bacteria? Yes No Results (if known) _____

Tested for ova and parasites? Yes No Results (if known) _____

Stool and vomitus specimens collected from ill persons should be stored in watertight containers (e.g., urine specimen cups) and refrigerated (not frozen), and shipped on ice, accompanied by CDC form 50.34.

Number of acute serum specimens collected from: ill persons _____

control persons _____

Anticipated date for collection of convalescent sera ____/____/____ (mm dd yyyy)

Matching acute and convalescent serologic specimens should be stored and shipped frozen in plastic (transportable) aliquot tubes, accompanied by CDC form 50.34. Acute sera should be collected within 7 days of onset of symptoms and convalescent sera should be collected 3 weeks after the collection of acute sera.

Date specimens shipped to CDC ____/____/____ (mm dd yyyy) Specimen type _____

Date specimens shipped to CDC ____/____/____ (mm dd yyyy) Specimen type _____

Date specimens shipped to CDC ____/____/____ (mm dd yyyy) Specimen type _____

Comments:

THANK YOU

Revised 10/01

RECOMMENDATIONS REGARDING SPECIMEN COLLECTION FOR DIAGNOSIS OF NLVs*

Clinical Specimens

Stool

Timing. Specimen collection for viral testing should begin on day 1 of the epidemiologic investigation. Any delays to await testing results for bacterial or parasitic agents could preclude establishing a viral diagnosis. Ideally, specimens should be obtained during the acute phase of illness (i.e., within 48--72 hours after onset) while the stools are still liquid or semisolid because the level of viral excretion is greatest then. With the development of sensitive molecular assays, the ability to detect viruses in specimens collected later in the illness has been improved. In specific cases, specimens might be collected later during the illness (i.e., 7--10 days after onset), if the testing is necessary for either determining the etiology of the outbreak or for epidemiologic purposes (e.g., a specimen obtained from an ill foodhandler who might be the source of infection). If specimens are collected late in the illness, the utility of viral diagnosis and interpretation of the results should be discussed with laboratory personnel before tests are conducted.

Number and Quantity. Ideally, specimens from $\geq$10 ill persons should be obtained during the acute phase of illness. Bulk samples (i.e., 10--50 ml of stool placed in a stool cup or urine container) are preferred, as are acute diarrhea specimens that are loose enough to assume the shape of their containers. Serial specimens from persons with acute, frequent, high-volume diarrhea are useful as reference material for the development of assays. The smaller the specimen and the more formed the stool, the lower the diagnostic yield. Rectal swabs are of limited or no value because they contain insufficient quantity of nucleic acid for amplification.

Storage and Transport. Because freezing can destroy the characteristic viral morphology that permits a diagnosis by EM, specimens should be kept refrigerated at 4 C. At this temperature, specimens can be stored without compromising diagnostic yield for 2--3 weeks, during which time testing for other pathogens can be completed. If the specimens have to be transported to a laboratory for testing, they should be bagged and sealed and kept on ice or frozen refrigerant packs in an insulated, waterproof container. If facilities for testing specimens within 2--3 weeks are not available, specimens can be frozen for antigen or PCR testing.

Vomitus

Vomiting is the predominant symptom among children, and specimens of vomitus can be collected to supplement the diagnostic yield from stool specimens during an investigation. Recommendations for collection, storage, and shipment of vomitus specimens are the same as those for stool specimens.

Serum

Timing. If feasible, acute- and convalescent-phase serum specimens should be obtained to test for a diagnostic $\geq$4-fold rise in IgG titer to NLVs. Acute-phase specimens should be obtained during the first 5 days of symptoms, and the convalescent-phase specimen should be collected from the third to sixth week after resolution of symptoms.

Number and Quantity. Ideally, 10 pairs of specimens from ill persons (i.e., the same persons submitting stool specimens) and 10 pairs from well persons (controls) should be obtained. Adults should provide 5--7 ml of blood, and children should provide 3--4 ml.

Storage. Specimens should be collected in tubes containing no anticoagulant, and the sera should be spun off and frozen. If a centrifuge is not available, a clot should be allowed to form, and the serum should be decanted and frozen. If this step cannot be accomplished, the whole blood should be refrigerated but not frozen.

Environmental Specimens

NLVs cannot be detected routinely in water, food, or environmental specimens. Nevertheless, during recent outbreaks (*33--36*), NLVs have been detected successfully in vehicles epidemiologically implicated as the source of infection. If a food or water item is strongly suspected as the source of an outbreak, then a sample should be obtained as early as possible and stored at 4 C. If the epidemiologic investigation confirms the link, a laboratory with the capacity to test these specimens should be contacted for further testing. If drinking water is suspected, special filtration (*45*) of large volumes (i.e., 5--100 liters) of water can concentrate virus to facilitate its detection.

MICROBIOLOGY FOODBORNE INVESTIGATION TEST REQUEST FORM

FOR LABORATORY USE ONLY
LAB#:

DATE STAMP:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:

Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:	**Physician**: _____	**SPECIMEN COLLECTION DATE**
Provider Code:	**Provider Phone:** _____	(MM/DD/YY)
	Provider Email: _____	
	Secure Fax #: _____	_____/_____/_____

Name of Investigator: _____ Phone: _____

Investigation Number: _____

Consulting Physician: _____ Phone: _____

Specimen Data:

[ ] Food (Specify Type): _____

[ ] Stool (Stool Samples will be tested upon arrival in the Laboratory)

[ ] Other (Specify): _____

[ ] Frozen

[ ] Refrigerated

[ ] Room Temperature

OUTBREAK INVESTIGATION AND OTHER PERTINENT INFORMATION:

State of Origin of sample/patient:

PLEASE PRINT

EPA Method 1623

PROTOZOA TEST REQUEST FORM

STATE OF UTAH PUBLIC HEALTH LABORATORY
46 NORTH MEDICAL DRIVE, SALT LAKE CITY, UTAH 84113

Lab Number: _____

WATER SYSTEM NO: _____ SOURCE NO:_____

Cost Code: _____

WATER SYSTEM NAME:_____ Special Code: _____

Customer ID #_____

COLLECTED BY:_____ **DATE COLLECTED:**_____ **TIME COLLECTED:**_____
mm/dd/yy 24hr CLOCK

EXACT DESCRIPTION OF SAMPLING POINT:_____

_____

Cryptosporidium and *Giardia* Filtration

Sample Filtration BEGINNING:

Time:_____

Meter:_____gal liters

Turbidity (NTU):_____

Temperature:_____

Sample Filtration END:

Time:_____

Meter:_____gal liters

Total Volume filtered: _____

PROTOZOA TESTING

Samples must be filtered using Pall Gelman ENVIROCHECK HV filter (1 μm).

A minimum of 10 L of untreated water from pressurized or unpressurized sources must be filtered.

If you are doing a Matrix Spike, collect 20 L of bulk water in a sterile plastic container (or containers) for spike and filtration to be performed at the laboratory.
Filters and bulk water must be shipped or delivered in coolers using wet ice or freezer packs, be careful not to allow samples to freeze. Sample receipt should not exceed 8 degrees C.

Sample must arrive at the Lab within 24 hours of the time of collection.

Any questions, call the Environmental Microbiology Lab at 801-584-8400

RABIES TEST REQUEST FORM

FOR LABORATORY USE ONLY
LAB#:

DATE STAMP:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:

Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:	**Physician**: _____	**SPECIMEN COLLECTION DATE**
Provider Code:	**Provider Phone:** _____	(MM/DD/YY)
	Provider Email: _____	
	Secure Fax #: _____	_____/_____/_____

Patient Information:

[ ] Bitten DATE: (mm/dd/yy)

[ ] Exposed

_____/_____/_____

Site, Extent and Circumstances of Bite:

Vet Information:

Address: _____

_____

_____

Telephone: _____

Fax: _____

Animal Information:

Species: _____

[ ] Euthanized Date: (mm/dd/yy)

[ ] Died _____/_____/_____

Owner's Name: _____

Address: _____

_____

_____

Telephone: _____

[ ] Provoked Attack (1)

[ ] Unprovoked Attack (2)

[ ] Contact with Other Possible Rabid Animal (3)

[ ] Rabies Immunization Current (4)

DIRECTIONS FOR SUBMITTING SPECIMENS:

Heads must be removed from any animal larger than a gopher. **DO NOT** send live animals with the exception of bats. (Container must be labeled "Live Bat"). Heads must be wrapped in newspaper, then placed in a plastic bag. If shipping is necessary, please put plastic bag containing head in a leakproof container packed on wet ice. **DO NOT** send by U.S. Mail except by Special Delivery.

VIRUS CULTURE TEST REQUEST FORM

FOR LABORATORY USE ONLY
LAB#:

DATE STAMP:

STATE OF UTAH PUBLIC HEALTH LABORATORY

46 NORTH MEDICAL DRIVE
SALT LAKE CITY, UTAH 84113-1105
TELEPHONE: (801) 584-8400 FAX: (801) 584-8486

TESTING WILL NOT BE PERFORMED UNLESS SLIP IS COMPLETELY FILLED OUT. PLEASE PRINT CLEARLY FOR ACCURACY.

PATIENT INFORMATION:

Patient Name (Last, First): _____

Patient ID #:	**DATE OF BIRTH** (mm/dd/yy)	**AGE:**	**SEX:**
_____	_____/_____/_____		M F

PROVIDER INFORMATION:	**Physician**: _____	**SPECIMEN COLLECTION DATE**
Provider Code:	**Provider Phone:** _____	(MM/DD/YY)
	Provider Email: _____	
	Secure Fax #: _____	_____/_____/_____

STATE OF ORIGIN OF PATIENT/SAMPLE
_____

Specimen Data:

[ ] CSF	[ ] Urine	[ ] Swab: _____
[ ] Blood	[ ] Throat Wash	[ ] Tissue: _____
	[ ] Sputum	[ ] Other: _____

Virus Culture Testing:

[ ] Herpes simplex (1)	[ ] Virus Culture Screen (3)
[ ] Cytomegalovirus (2)	[ ] Respiratory
[ ] Colorado Tick Fever (4)	[ ] Enteroviruses
[ ] Varicella - Zoster (11)	[ ] Adenovirus
[ ] Influenza (15)	[ ] Other (Specify): _____

Epidemiological Data:

Disease Suspected: _____ Date of Onset: _____

LAB USE ONLY

Cell Line										
Vero										
RMK										
MRC5										
Initials										

Cell Line	72hr	7 day	A	N	I-A	I-B	Para 1	Para 2	Para 3	RSV
RMK										
MRC5										
Plate										
Initials										

Pool/ Spa/ Hot tub samples will have a colilert test and a heterotropic plate count performed on each sample. All other samples will have only a colilert test performe unless specified in "other". The colilert test consists of coliform and *E. coli* analysis.

INSTRUCTIONS FOR COLLECTING WATER SAMPLES

1. Do not rinse bottle or touch the lip of bottle.
2. Use only approved containers.
3. Return sample to lab within 24 hours of collection and refrigerate or hold on ice until delivery, also do not allow to freeze. Preferably hold sample at less tha 10 degress Celsius (50 degrees Fahrenheit).
4. Collect sample by removing aerator from tap and letting water run for 2-3 minutes. Fill bottle above the the 100 mL line
5. If collecting sample from lake, pond, or type of source water, submerge the bottle, forcing it forward with an even slow motion
6. Select sampling point that will be representative of the system being tested
7. Fill out test request form completely.

STATE OF UTAH COLIFORM REGULATIONS (FOR DRINKING WATER ONLY)

For routine sample which are total coliform positive

1. System must collect the number of repeat samples indicated below for each total coliform positive result

Population	# of repeat samples
25-1,000	4
>1,000	3

2. The repeat samples must taken within 24 hours of the original positive sample and the repeat test request must indicate the lab number and date of the original positive sample. Specific locations of repeat samples are as follows:
   - **a.** within 5 service connections upstream
   - **b.** within 5 service connections downstream
   - **c.** at the original sample site
3. Additional samples are required for the next month's sampling. The number of additional samples are as follows

Population	# of routine	# of additional samples
25-1,000	1	4
1,000-2,500	2	3
2,500-3,300	3	2
3,300-4,100	4	1
>4,100	5 or more	none

For *E. coli* positive samples and repeat samples resulting in total coliform positives

1. If either the original routine sample or any of the repeat samples are fecal coliform positive for *E. coli,* an acute violation has occurred and public notice is required within 72 hours.
2. If both the original routine sample and all repeat samples are total coliform positive, a non-acute violation has occurred and public notice is required within 14 days

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5. If collecting sample from lake, pond, or type of source water, submerge the bottle, forcing it forward with an even slow motion
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WATER BACTERIOLOGICAL ANALYSIS TEST REQUEST FORM

STATE OF UTAH PUBLIC HEALTH LAB, 46 N MEDICAL DR., SLC, UT 84113-1105, (801) 584-8400, FAX 584-8486

PLEASE USE A BALL POINT PEN AND PRINT CLEARLY WHEN COMPLETING THE FORM

SYSTEM #: | SYSTEM NAME:

SAMPLING POINT DESCRIPTION:

COLLECTED BY:

COLLECTION DATE AND TIME (24 HOUR CLOCK):

FOR LABORATORY USE ONLY

LAB#

TEMPERATURE: | CONDITION: ICE / NO ICE

RECEIVED DATE/TIME STAMP

ANALYZED DATE/TIME STAMP

TYPE OF SAMPLE

- ☐ PUBLIC WATER SYSTEM
- ☐ PRIVATE WATER SYSTEM (Well, Spring, etc.)
- ☐ POOL/SPA/HOT TUB (Chlorinated ☐yes ☐no ppm_____)
- ☐ OTHER (RO, Deionized, Raw, etc.)_____

SAMPLE NOT ANALYZED / SUBMIT NEW SAMPLE

- ☐ EXCEEDED HOLDING TIME (Over 30 hrs from collection to lab receipt)
- ☐ COLLECTION DATE AND TIME NOT RECORDED
- ☐ FROZEN
- ☐ LEAKED
- ☐ NOT STATE LAB CONTAINER
- ☐ OTHER _____

04/2003 DC

TYPE OF PROCESSING

- ☐ ROUTINE
- ☐ REPEAT LAB#:_____ DATE:_____
- ☐ HEALTH DEPARTMENT INVESTIGATIVE
- ☐ PRIVATE INVESTIGATIVE (NOT FOR OFFICIAL RECORDS)

CONTACT INFORMATION

State Laboratory - Environmental Microbiology (801) 584-8400
State Division of Drinking Water (801) 536-4200
Contact Your Local Health Department for Pool, Spa, and Hot Tub Information

REPORTING INFORMATION

NAME:
ADDRESS:
CITY:
STATE/ ZIP:
PHONE: FAX:

BILLING INFORMATION

NAME:
ADDRESS:
CITY:
STATE/ ZIP:
PHONE: FAX:

WATER BACTERIOLOGICAL ANALYSIS TEST REQUEST FORM

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FOR LABORATORY USE ONLY

LAB#

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- ☐ LEAKED
- ☐ NOT STATE LAB CONTAINER
- ☐ OTHER _____

04/2003 DC

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- ☐ ROUTINE
- ☐ REPEAT LAB#:_____ DATE:_____
- ☐ HEALTH DEPARTMENT INVESTIGATIVE
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CITY:
STATE/ ZIP:
PHONE: FAX:

Appendix C: Bioterrorism Specimen Collection and Transport Guidelines

Bacillus anthracis

ACCEPTABLE SPECIMENS:
Specimens of choice will be determined by the clinical presentation. ***Environmental or nonclinical samples and samples from announced events are not processed by Level A laboratories; please contact local law enforcement or UDOH directly.***

a. Cutaneous lesions

(1) Vesicular stage: aseptically collect vesicular fluid on sterile swabs from previously unopened vesicle.
NOTE: The anthrax bacilli are most likely to be seen by Gram stain in the vesicular stage.

(2) Eschar stage: collect eschar material by CAREFULLY lifting the eschar's outer edge; insert a sterile swab, then slowly rotate for 2-3 seconds beneath the edge of the eschar without removing it.

Transport directly to laboratory at room temperature. For transport time >1 h and <24 h, transport at 2 to 8°C.

b. **Stool**: Transfer ≥5 grams of stool directly into a clean, dry, sterile, wide-mouth, leak-proof container. Transport unpreserved stool to laboratory within 1 h. For transport time >1h and < 24 h, refrigerate at 2 to 8°C; Cary-Blair or equivalent transport media is acceptable.

c. **Rectal swab**: For patients unable to pass a specimen, obtain a rectal swab by carefully inserting a swab 1 inch beyond the anal sphincter. Transport directly to laboratory at room temperature. For transport time >2 h and <24 h, transport at 4°C.

d. **Blood cultures**: Collect appropriate blood volume and number of sets per laboratory protocol. NOTE: In later stages of disease (2-8 days post-exposure), blood cultures may yield the organism, especially if specimens are obtained prior to antibiotic treatment. Transport directly to laboratory at room temperature.
Note: Whole blood collected in a purple-top tube may be requested for additional tests.

e. **Sputum**: collect >1 ml of a lower respiratory specimen into a sterile container. Inhalational anthrax usually does not result in sputum formation. Transport in sterile, screw-capped container at room temperature when transport time is < 1 h. For transport time >1 h and < 24 h, transport at 4°C.

f. **CSF, tissue, autopsy samples** collect aseptically and place in sterile containers. Transport directly to laboratory at room temperature.

Brucella species

ACCEPTABLE SPECIMENS: ***Environmental/nonclinical samples and samples from announced events are not processed by Level A Laboratories; please contact local law enforcement or the UDOH directly.***

1. **Blood or bone marrow** – these are the sources from which *Brucella* spp. is most often isolated. Standard blood culturing systems. Transport at room temperature. **Note:** Whole blood collected in blue, purple or green top tubes may be requested for additional tests.

2. **Serum** – for serologic diagnosis, an acute phase specimen should be collected as soon as possible after onset of disease. A convalescent phase specimen should be collected >14 days after the acute specimen. Preferably send at least 1 mL, refrigerated.

3. **Spleen, liver, or abscess** – *Brucella* spp. are occasionally isolated from these sources. Selective media can be used for isolation of *Brucella* spp. from specimens with mixed flora (see below). Specimens should be refrigerated (2-8° C) until inoculation. Tissue must be kept moist, add several drops of sterile saline if necessary.

Burkholderia mallei and *Burkholderia pseudomallei*

ACCEPTABLE SPECIMENS: ***Environmental/nonclinical samples and samples from announced events are not processed by Sentinel Laboratories; please contact local law enforcement or the UDOH directly.***

1. **Blood –** Collect blood specimens before antibiotics are administered, when possible. Collect appropriate volume and number of sets per laboratory protocol.

2. **Urine –** Collect a midstream clean-catch specimen or a catherization specimen.

3. **Abscesses, tissue aspirates, fluids –** Collect tissues and fluids rather than swabs, when possible.

4. **Special situations –** Throat, nasal, skin or sputum specimens may be helpful in screening exposed individuals if a release of *B. mallei* or *B. pseudomallei* has been confirmed.

Clostridium botulinum

ACCEPTABLE SPECIMENS - ***Environmental/nonclinical samples and samples from announced events are not processed by Level A laboratories; please contact local law enforcement.***

Foodborne Botulism

1. Clinical specimens – serum, gastric contents, vomitus, stool, return from a sterile water enema.
2. Autopsy samples – serum gastric and intestinal contents
3. Food samples and/or empty containers with the remnants of the food

Infant Botulism

1. Feces or return from a sterile water enema.
2. Serum – generally not useful since an infant's body mass is small and the toxin is quickly absorbed.
3. Autopsy samples – intestinal contents from different levels of the small and large intestine.
4. Food and environmental (soil and house dust) as appropriate per the investigation.

Wound Botulism

1. Serum
2. Exudate, tissue or swab samples of wound (transported in anaerobic transport media)
3. Isolate of suspect *Clostridium botulinum* submitted in an anaerobic transport vessel.
4. Feces or return from a sterile water enema (wound may not be the source).

Intentional toxin release or Laboratory Accident

1. Serum, Nasal swab
2. Feces or return from a sterile water enema.
3. Food
4. Environmental swabs

MATERIALS

A. Media: Anaerobic media (chopped meat or equivalent); follow standard laboratory protocols.

B. Supplies

1. Port-A-Cul vials or equivalent
2. Leakproof containers (i.e., sealed plastic bags, plastic containers)
3. Petroleum jelly or petrolatum or equivalent (i.e., Vaseline)
4. Sterile, non-bacteriostatic water
5. Packaging materials

PROCEDURE

A. Collection

1. **Feces**: Place into sterile unbreakable container and label carefully. Confirmatory evidence of botulism may be obtained from 10-50 gram quantities (Walnut size); botulism has been confirmed in infants with only "pea-sized" stool samples. The specimen must be kept cool or refrigerated, do not freeze unless an unavoidable delay of several days is anticipated. Freezing does not affect the ability to detect toxin, but does affect the ability to detect the organism.
2. **Enema**: Place approximately 20 ml into sterile unbreakable container and label carefully. If an enema must be given because of constipation, a minimal amount of fluid (preferably non-bacteriostatic water) should be used to obtain the specimen so that the toxin will not be unnecessarily diluted. Transport in a Port-A-Cul vial to maintain anaerobiosis. Specimens must be kept cool or refrigerated.
3. **Gastric aspirate or vomitus**: Place approximately 20 ml into sterile unbreakable container and label carefully. Transport in a Port-A-Cul vial to maintain anaerobiosis. Specimens must be kept cool or refrigerated.
4. **Serum**: Use red top or separator type tubes to obtain serum (no anticoagulant). Samples should be obtained as soon as possible after the onset of symptoms and before antitoxin is given. Enough blood should be collected to provide at least 10 mL of serum (approximately 20 mL of whole blood). Serum volumes less than 3 ml will provide inconclusive results. Whole blood should not be sent as it typically undergoes excessive hemolysis during transit. Specimen should be kept cool or refrigerated, do not freeze unless an unavoidable delay of several days is anticipated.
5. **Tissue, wounds or exudates**: Place into sterile unbreakable container and label carefully. Specimens should be placed in Port-A-Cul vials and sent to the appropriate laboratory, preferably without refrigeration, for attempted isolation of *C. botulinum*. Swabs of superficial wounds are not acceptable for anaerobic culture. Maintain specimens at room temperature.
6. **Postmortem**: Obtain specimens of intestinal contents from different levels of small and large intestines. Place approximately 10 grams per specimen into sterile unbreakable container and label carefully. Obtain gastric content, serum and tissue is/as appropriate.
   Keep the samples cool or refrigerated.
7. **Culture**: Ship suspicious isolates anaerobically (overlay liquid media with 2-inch layer of sterile petroleum jelly; melt/temper prior to overlaying culture). Cultures may be shipped at room temperature or refrigerated.
8. **Food specimens**: Foods should be left in their original containers if possible, or placed in sterile unbreakable containers and labeled carefully. Place containers individually in leakproof containers (i.e., sealed plastic bags) to prevent cross-contamination during shipment. Empty containers with remnants of suspected foods can be examined. Foods most likely to allow growth of *C. botulinum* will have a pH of 3.5-7.0 (usually 5.5-6.5). Possible foods include:
   - ●home canned products having a low acidity (pH of 4.6 or greater)
   - ● foods with low salt or low sugar content

- ●foods that are held at temperatures that allow the organism to grow (optimal 35°C, but as low as 15°C)
- ●foods that are consumed without prior heating.

Foods that are commercially processed are rarely incriminated; however, the threat to public health is much greater with a commercial foodstuff. Unopened containers are to be sent to the U.S. Food and Drug administration (FDA), with prior arrangement. Keep the samples cool or refrigerated, do not freeze.

9. **Swab samples**:
   a. **Clinical:** Send swabs in an anaerobic transport medium (e.g., Port-A-Cul tubes). For aerosolized botulinum toxin exposure, obtain nasal swabs for culture for *C. botulinum*. For toxin testing, serum should be used. Swabs may be shipped at room temperature or refrigerated.

****Specimens that are frozen must remain frozen until it is time to perform the test.**

B. Transportation - For complete guidelines, refer to packaging and shipping protocol at www.health.utah.gov/els/microbiology

1. If an unavoidable delay of several days is anticipated, the specimens (serum or stool) should be kept frozen and then packed in an insulated container with dry ice and proper cushioning material for shipment. Freezing does not affect the ability to detect botulinum toxin in specimens; freezing does reduce the probability of recovering *C. botulinum*. Since direct detection of toxin provides the best laboratory confirmation of botulism, priority should be given to preserving preformed toxin prior to transport.
2. The receiving laboratory (UDOH Lab) should be notified in advance by telephone as to when and how specimens will be shipped and when they will arrive.

Coxiella burnetii

ACCEPTABLE SPECIMENS

Note: Sentinel laboratories should not accept environmental/non-clinical specimens. These specimens should be forwarded directly to the Utah Department of Health Laboratory. If a bioterrorism event is suspected, please contact local law enforcement.

A. Serum: Collect serum (red-top or serum separator tube, tiger-top tube) as soon as possible after onset of symptoms (acute phase) and with a follow-up specimen (convalescent phase) at ≥ 14 days for serological testing.

B. Blood: Collect blood in EDTA (lavender) or sodium citrate (blue) vacutainer tubes and maintain at 4°C for storage and shipping for PCR or special cultures. If possible, collect specimens prior to antimicrobial therapy.

C. Tissue, body fluids, nasopharyngeal swabs, tracheal/bronchial washings, lesion exudates: Specimens can be kept at 2-8°C if transported within 24 hours. Store frozen at -70°C or on dry ice.

D. Bacterial isolates

Francisella tularensis

ACCEPTABLE SPECIMENS: ***Environmental/nonclinical samples and samples from announced events are not processed by Sentinel laboratories; please contact local law enforcement.***

Specimens of choice will be determined by the clinical presentation.

A. Blood Culture (Septicemic): Collect appropriate blood volume and number of sets per established laboratory protocols. Standard blood culturing system (10-20 ml/bottle). Transport directly to Sentinel Laboratory at room temperature. Hold at room temperature until placed onto the blood culture instrument or incubator. Do not refrigerate. Follow established laboratory protocol for processing blood cultures.

B. Biopsied tissue or scraping/aspirate of ulcer or lesion: a swab of the ulcer is an acceptable alternative. Submit tissue, scraping, or aspirate in a sterile container. For small tissue samples, add several drops of sterile normal saline to keep the tissue moist. Transport at room temperature for immediate processing. If processing of specimen is delayed, keep specimen chilled (2-8˚C).

C. Swabs: Obtain a firm sample of the advancing margin of the lesion. If using a swab transport carrier, the swab should be reinserted into the transport package and the swab fabric moistened with the transport medium inside the packet. Transport at 2-

8˚C; room temperature is acceptable. If processing of specimen is delayed, keep specimen chilled (2-8˚C).

D. Lower respiratory tract (pneumonic) – sputum or aspirate
Transport specimen (>1 ml) in a sterile, screw-capped container at room temperature if transport will be < 2 hours. If transport will be 24 hours or less, store and transport at 4˚C.

E. Serum – for serological diagnosis
An acute phase specimen should be collected as soon as possible after onset of disease. A convalescent phase specimen should be collected 21 days after the acute specimen. Collect blood (a minimum of 5 ml) by venipuncture into a tube without anticoagulant. Allow blood to clot, separate serum into a separate tube. Refrigerate and transport as soon as possible.

Variola virus

ACCEPTABLE SPECIMENS (for Variola, Vaccinia, Varicella and Non-variola Orthopox)

A. Biopsy: Aseptically place two to four portions of tissue into a sterile, leakproof, freezable container. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

B. Scabs: Aseptically place scrapings/material into a sterile, leakproof, freezable container. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

C. Vesicular fluid: Collect fluid from separate lesions onto separate sterile swabs. Be sure to include cellular materials from the base of each respective vesicle. If transport time will be ≤6 hours, transport at 4°C. Store specimens at -20°C to -70°C.

Yersinia pestis

ACCEPTABLE SPECIMENS - ***Environmental/nonclinical samples and samples from announced events are not processed by Sentinel laboratories; please contact local law enforcement.***

Specimens of choice will be determined by the clinical presentation.

A. Lower respiratory tract (pneumonic): Bronchial wash or transtracheal aspirate (≥1 ml). Sputum may be examined but it is not advised because of contamination by normal throat flora. Transport specimens in sterile, screw-capped containers at room temperature to the Sentinel Laboratory. If it is known that material will be

transported from 2-24 hours after collection, then store the container and transport at 2-8˚C.

B. Blood (septicemic): Collect appropriate blood volume and number of sets per established lab protocol. Note: In suspected cases of plague, an additional blood or broth culture (general nutrient broth) should be incubated at room temperature (22-28˚C), the temperature at which *Y. pestis* grows faster. Do not shake or rock the additional broth culture so that the characteristic growth formation of *Y. pestis* can be clearly visualized. Transport samples directly to the Sentinel Laboratory at ambient temperature. Hold them at ambient temperature until they are place onto the blood culture instrument or incubator. Do not refrigerate. Follow established laboratory protocol for processing blood cultures.

C. Aspirate of involved tissue (bubonic) or biopsied specimen: Liver, spleen, bone marrow, lung. Note: Aspirates may yield little material; therefore, a sterile saline flush may be needed to obtain an adequate amount of specimen. Syringe and needle of aspirated sample should be capped, secured by tape and sent to the Sentinel Laboratory. Submit tissue or aspirate in a sterile container. For small samples, add 1-2 drops of sterile normal saline to keep the tissue moist. Transport the sample at room temperature for immediate processing. Keep the specimen chilled if processing of the specimen will be delayed.

D. Swabs: A swab of tissue is not recommended. However, if a swab specimen is taken, the swab should be reinserted into the transport package for transport.